

Status of Kentucky's Forests Biennial Report December 2002



STATUS OF KENTUCKY'S FORESTS BIENNIAL REPORT - DECEMBER 2002

Introduction

Ninety-three percent of Kentucky's 12.7 million acres (one-half of the state) of forestland is privately owned. This forestland provides multiple benefits to the citizens of the Commonwealth, including timber production, wildlife habitat, recreational opportunities, quality water and aesthetic beauty. The passage of the Kentucky Forest Conservation Act (KFCA) mandated that the Natural Resources and Environmental Protection Cabinet's Division of Forestry ensure healthy, sustainable forests that are ecologically sound, provide economic opportunities and benefit the overall quality of life for all Kentuckians.

Executive Summary

On March 31, 1998, Gov. Paul E. Patton signed the Kentucky Forest Conservation Act into law. The primary objectives of the act are to protect water quality from nonpoint source pollution generated from commercial timber-harvesting operations, educate landowners about the importance of proper forest management for multiple benefits, and educate loggers on proper timber harvesting techniques in the Commonwealth. The following report highlights the accomplishments from the last two years since the passage of the Kentucky Forest Conservation Act as well as a brief accomplishment summary of other division programs.

Kentucky Master Logger (KML) Program (KRS 149.342)

- The KML program has held 121 training workshops resulting in 5,031 certifications.
- The program has held 56 continuing education classes for master loggers to maintain their designation.

Forestry Best Management Practices Board (KRS 149.350)

- Gov. Patton appointed the 13-member board on May 7, 1999.
- The board serves as the primary source of BMP expertise and currently submits changes to the Kentucky Agriculture Water Quality Authority.

Inventory of Kentucky's Forests (KRS 149.338)

- Panel 3 of the Forest Inventory and Analysis (FIA) project is 100 percent complete.
- Forest Health Monitoring and ozone plots are 100 percent complete.
- The Timber Product Output (TPO) Survey for 1999 was completed and published in May 2002.
- The Delivered Log Price Survey (DLPS) is currently publicized quarterly in the division's "Growing Gold" publication.

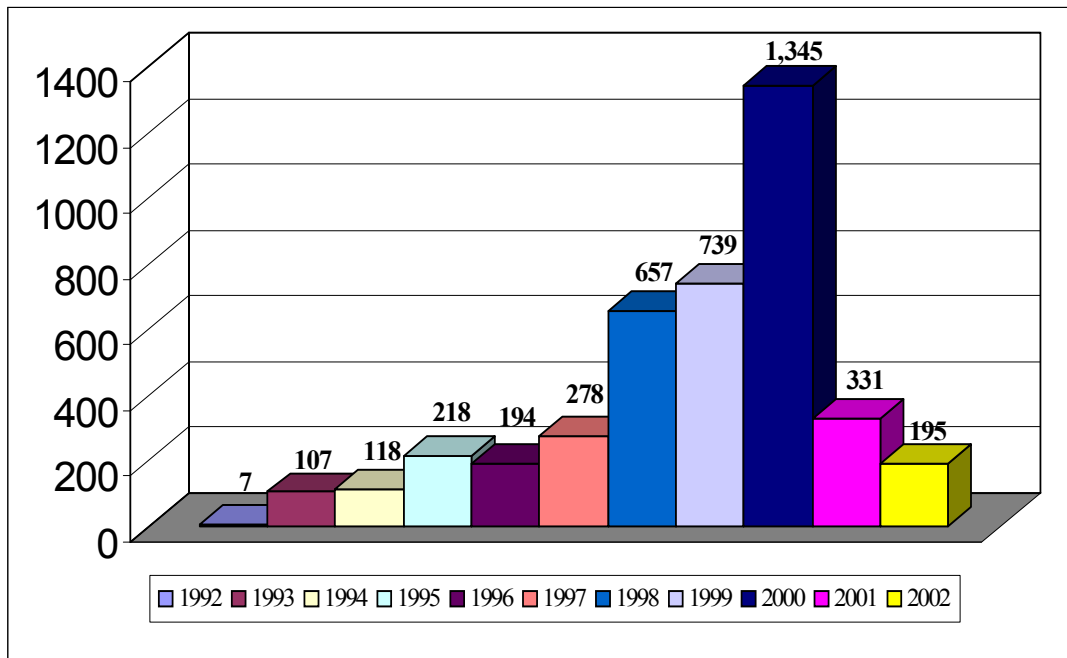
Forest Stewardship Incentives Fund (FSIF) (KRS 149.340)

Money was not appropriated for the FSIF. Therefore, the only funding source is civil penalties from violations of the KFCA. At this time, only \$2,455 in civil penalties have been collected from violators of the timber harvesting provisions act.

Kentucky Master Logger Program

The cabinet promulgated regulations to establish an internal and external workgroup to review draft regulations for the KML program that addressed certification, continuing education, certification renewal, fees, revocation of certification and reciprocity. The Kentucky Master Logger (KML) Training Program has been underway since the fall of 1992. Through 2002, the division and its partners – the University of Kentucky Department of Forestry, the Kentucky Forest Industries Association and Bryan Equipment Co. – have held 121 programs with more than 5,000 people completing the program. See Table 1 below for annual attendance rates.

Table 1 - Master Loggers in Kentucky



- **Continuing Education**

The KFCA requires continuing education units (CEUs) for master loggers to maintain their designation. The KML partnership established protocols for continuing education. Master loggers must complete six hours of CEUs every three years. The courses designed include timber cruising basics, forestry aesthetics/ OSHA compliance guide, forest management for loggers and advanced best management practices. Since 1996, 56 continuing education classes have been held and more than 1,400 master loggers have been redesignated. Class descriptions, schedules, and other up-to-date information is available from the Kentucky Master Logger Web site at www.masterlogger.org.



- **Reciprocity**

The division developed protocols for recognizing other states' logger education programs. As of this time, Kentucky has reciprocity agreements with Indiana, Ohio, Tennessee, Virginia and West Virginia.

- ***Master Logger Database***

The KFCA database is complete and uses the latest in web technology. Division employees enter data from any computer that has Internet access, and as a result, field staff may quickly confirm who is a master logger. This greatly increases the number of stations available for data entry and analysis and also saves money on software and licensing fees.

Best Management Practices (BMPs)

The KFCA requires loggers to use appropriate best management practices (BMPs). The Kentucky Administrative Regulation 402 KAR 3:030 incorporated by reference Section 1, Silviculture, pages 12-39 of *The Kentucky Agricultural Water Quality Plan (AWQP)* established the appropriate BMPs. Protocols and procedures for inspection and enforcement are currently being utilized, and an inspector's manual has been developed.

- ***KML Training for Division Employees***

All division personnel involved with the implementation of the KFCA have attended the KML program. Currently, more than 150 division employees have received a master logger designation.

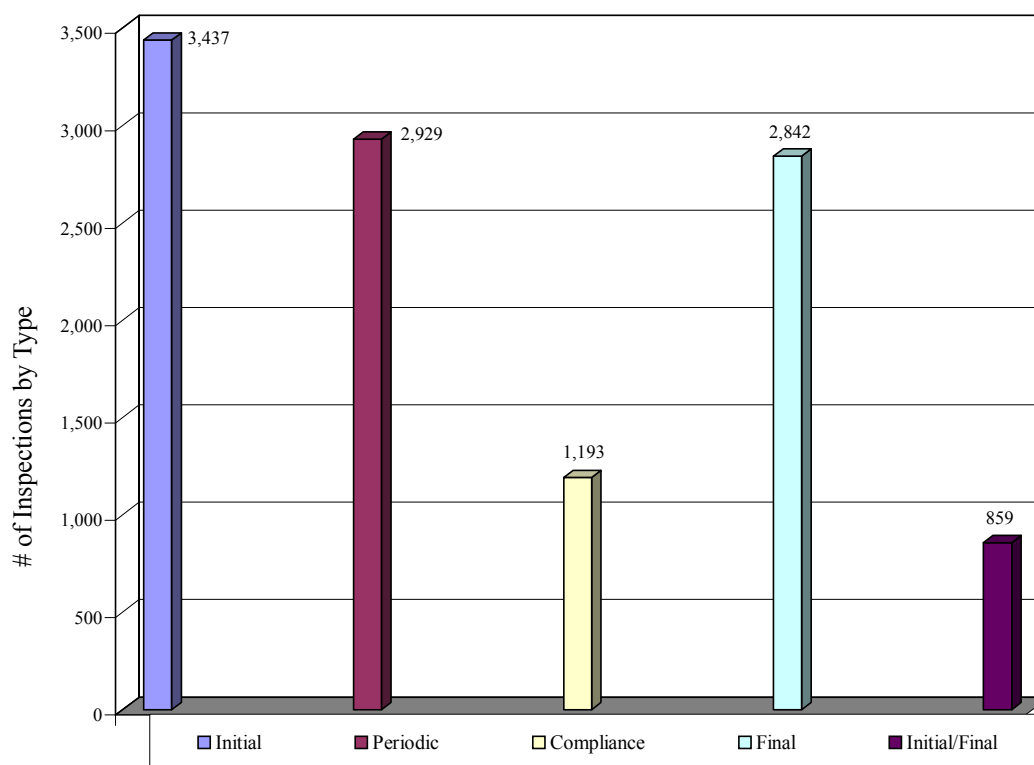
- ***District KFCA Follow-up Training***

Each division district office continues to provide in-house KFCA training for new employees and refresher training for every forest ranger technician, the primary inspectors.

- ***Logging Site Inspections***

Since July 15, 2000, division inspectors have inspected 11,260 logging sites. See Table 2 below for number of inspections by type.

TABLE 2 - Timber Harvest Inspections by Type



- **Types of Timber Harvesting Site Inspections**

Initial - First inspection of a harvesting operation for compliance with the BMP and water quality requirement of the Kentucky Forest Conservation Act and the presence of a master logger on site and in charge.

Periodic - Follow-up inspection of a harvesting operation that was in compliance at the time of the previous inspection (progress check).

Compliance - Follow-up inspection of a harvesting operation that was out of compliance at the time of the last inspection.

Final - Inspection performed after the harvest operation has been completed to inspect BMP implementation and water quality standards.

Initial/Final - First inspection of a **completed** harvesting operation where no logger is on site but the site is in compliance with BMP and water quality requirements of KFCA.

- **Enforcement Action Protocols**

These protocols describe the process by which compliance with the statute is to be enforced when an inspection shows that the appropriate BMPs have not been implemented by a timber harvesting operator. See Table 3 below for enforcement actions by violation type.

Written Warning will be issued by the inspector who determines that the logger or operator has failed to use the appropriate BMPs or is causing water pollution.

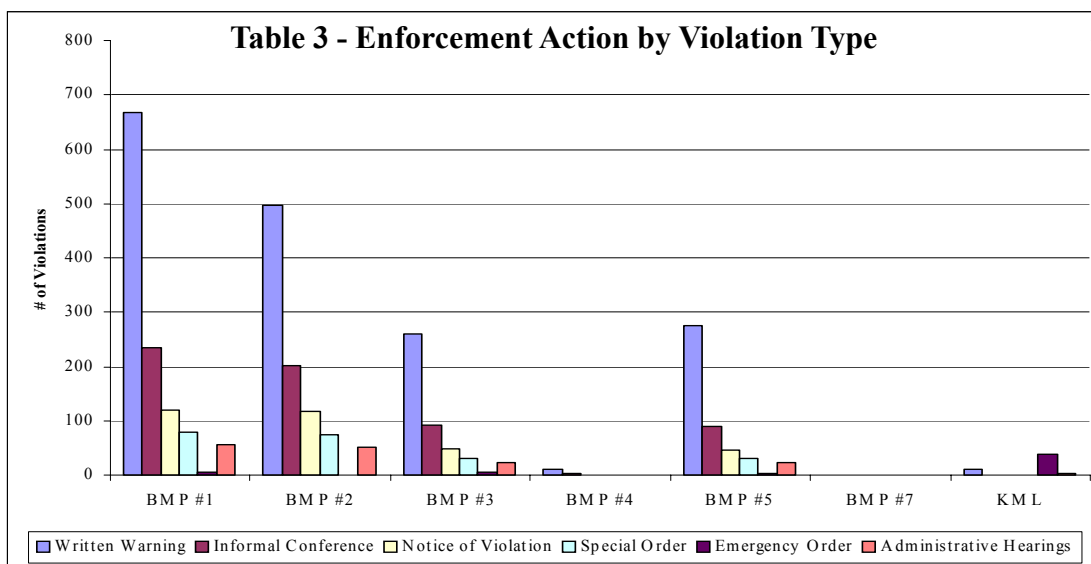
Informal Conference will occur if following the Written Warning a follow-up inspection shows that abatement and compliance are not completed in the designated time frame.

Notice of Violation will be issued to the logger or operator who has failed to implement the appropriate BMP or has failed to abate the water pollution since the Informal Conference.

Special Order mandates the logger or operator to immediately implement the BMP or corrective measures identified in the notice of violation. The Special Order notifies the logger or operator of the opportunity for an administrative hearing.

Emergency Order directs the logger or operator to immediately cease the illegal or dangerous activity and implement corrective measures within a reasonable time. An Emergency Order will be issued if a master logger is not in charge on-site.

Administrative Hearing allows both the logger or operator and inspector to tell their respective sides of the issue in front of a hearing officer with the Office of Legal Services. If the logger is found negligent in their noncompliance, they will be assessed a civil penalty not to exceed \$1,000 for each violation and be deemed a bad actor.



- ***Definition of Best Management Practice Violations***

BMP #1 - Relates to water control structures for access roads, skid trails and landings.

BMP #2 - Relates to revegetating sediment-producing, erodible or severely eroded areas.

BMP #3 - Relates to working in streamside management zones (SMZs) which can cause a higher degree of water quality degradation.

BMP #4 - Relates to water control structures near sinkholes.

BMP #5 - Relates to preventing tree debris, such as tops from harvested trees, from remaining in or being washed into perennial streams.

BMP #7 - Relates to the use of fertilizers near bodies of water, sinkholes and SMZs.

KML - Relates to having no Kentucky master logger on-site during a timber harvesting operation.

- ***Penalties and Fines***

Since July 15, 2000, 18 timber harvest loggers or operators have been designated as bad actors, penalties totaling \$43,508.50 have been assessed, and three cases were settled for \$2,455. The remaining \$41,053.50 was sent to collections or are currently in the negotiation phase.

Inventory of Kentucky's Forests

The division has been actively involved in several aspects of inventorying Kentucky's forests. These projects consist of Forest Inventory and Analysis (FIA), Forest Health Monitoring (FHM), Timber Product Output (TPO) Survey and Delivered Log Price Survey (DLPS).

- ***Forest Inventory and Analysis (FIA)***

The inventory project in Kentucky involved revisiting 1,766 plots from the last periodic survey completed in 1988 and establishing 4,307 new plots. The old plots were revisited and remeasured to determine the growth and removal of timber from our forests since the 1988 inventory. The new plots were established to conform to a new national standard. The project in Kentucky was broken into two phases. In the first phase, crews completed all remeasurements. The second phase of the project was to install five panels (4,307 new plots) across the state. At this time, panels 1-3 have been completed (60 percent complete). To complete the forest inventory, the division has 10 foresters to work in two-person teams. The USDA Forest Service is committed to having a 10-person team in the state as well. Two of the Forest Service employees are assigned to training and quality assurance/quality control and will remain in the state indefinitely.

- ***Forest Health Monitoring (FHM)***

The health of Kentucky's forests is an important issue. To accurately assess forest health, the division participates in a cooperative, multi-agency program with the defined mission to monitor, assess, and report on long-term status, changes and trends in the health of the nation's forests. The USDA Forest Service administers the FHM program, and Kentucky is a cooperating partner. The division monitors plots located across the state for the following health parameters: ozone bio-indicator plants, tree damage, tree mortality, vegetation structure, plant diversity, tree crown condition, tree growth, tree regeneration and soil conditions.

To complete the inventory, the division hires three summer interns to inventory an average of 55 plots allocated for each year. A total of 275 plots are to be inventoried within the next five years, and the division is 60 percent completed for this first cycle.

- ***Timber Product Output (TPO) Survey***

The results of this survey were printed in May 2002 by the USDA Forest Service, Southern Research Station and in cooperation with the Division of Forestry.

- Combined industrial timber products from roundwood and plant by-products increased by 12 percent from 293 to 328 cubic feet.
- Output of hardwood roundwood products increased 14 percent to 209 million cubic feet, while output of softwood roundwood products was up 3 percent to 11 million cubic feet.
- Sawlogs accounted for 81 percent of the state's total roundwood products. Output of hardwood sawlogs increased 11 percent to 173 million cubic feet, while that of softwood sawlogs increased 3 percent to 6 million cubic feet.
- An estimated 201 million cubic feet, or 88 percent of the total roundwood output in 1999, came from nonindustrial private forestlands. Public lands contributed 24 million cubic feet, or 11 percent of the output, and forest industry lands made up the remaining 1 percent, or 2 million cubic feet.

- ***Delivered Log Price Survey (DLPS)***

In conjunction with the University of Kentucky Department of Forestry and the Kentucky Department of Agriculture, the division has developed a process of reporting delivered log prices on a quarterly basis. The quarterly reports are available in the division's "Growing Gold" publication and through the Department of Agriculture's farm product reporting system in print, on radio and television and electronically on the Internet. Table 4 below shows log price trends for the 4th quarters from 2000 - 2002.

TABLE 4 - Delivered Log Price Trends for the 4th Quarters of 2000 - 2002

SPECIES	4TH QUARTER 2000	4TH QUARTER 2001	4TH QUARTER 2002
Red Oak	300-800	325-650	325-550
Yellow-poplar	200-500	185-325	190-275
White Oak	300-420	260-555	265-365
Walnut	300-1000	350-575	300-500
Ash	200-450	255-515	210-300
Hickory	150-225	140-225	120-205
Cherry	300-1200	350-725	365-700
Hard Maple	300-1000	310-725	350-735

* Dollar figures are based on a per 1000 board foot volume.

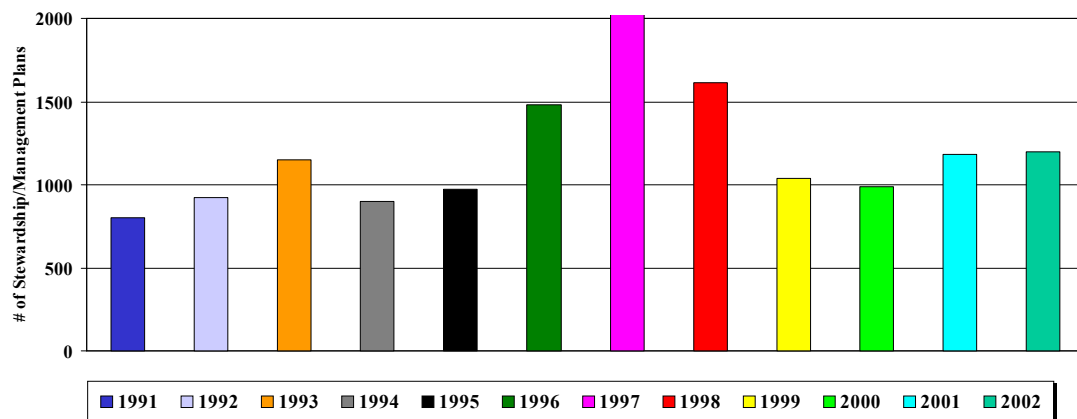
Forest Education and Stewardship

Increasing public awareness of the environmental, economic and social importance of Kentucky's forests is an important issue. The division has traditionally used its forest stewardship program, interagency events, field days, news articles and division publications to inform forest landowners about forestry issues. Now the division has entered the technology era by adding the Internet, teleconferencing, telemarketing, computer animated program software and television to its repertoire.

- ***Forest Stewardship Program***

Through the Forest Stewardship Program, the division offers free technical assistance to landowners by developing a forest stewardship plan designed to help them manage their forestland according to their personal goals. The division also offers technical assistance in implementing the recommendations made in the plan. Kentucky's Forest Stewardship Program foresters have written more than 12,000 plans for landowners since its inception in 1990.

TABLE 5 - Forest Stewardship/Management Plans



- ***Forestry Field Days***

The division and other agencies have always promoted each other's education programs and field days. The division has participated in over 96 county and regional field days statewide and continues to coordinate additional forestry-focused field days. The division partners with the University of Kentucky (UK) Cooperative Extension Service, Natural Resources Conservation Service, Department of Fish and Wildlife Resources, Farm Services Administration and the Kentucky Department of Agriculture in developing and promoting the forestry field days.

- ***BMP Demonstration Sites***

The division has established BMP demonstration sites at three state forests: Tygarts, Pennyrite and Kentucky Ridge. Each of these sites is currently used for master logger training programs. A self-guided BMP trail with interpretative signage and accompanying brochure was developed for Tygarts State Forest and is used for landowner education.

- ***Woodland-a-Syst Program***

In an attempt to reach the many landowners that are reluctant to contact state agencies, a committee is in the process of developing a "woodland-a-syst" program. The intent of the program is to allow forest landowners to develop their

own forest stewardship plan based upon their personal goals for their property. The landowner would be able to work at his/her own pace in developing the plan. This program would allow landowners to become better informed about their forestland, leading to wiser management decisions. Participants in the program will receive educational training and a “woodland-a-syst” handbook that is currently being developed. The committee members include representatives from the following agencies: UK Cooperative Extension Service, Division of Forestry, Division of Conservation, Department of Fish and Wildlife Resources, Kentucky Department of Agriculture, and USDA Natural Resources Conservation Service.

- ***Electronic Field Trip to the Forest***

A simple hike through the woods turns into a learning experience for three teenagers in KET’s **Electronic Field Trip to the Forest**. When a forester from the Kentucky Division of Forestry joins their outing, the young hikers begin an exploration of the history of Kentucky’s forests, the natural and human influences that have shaped them, and what it will take to ensure their future survival. The division partnered with the U.S. Forest Service, Kentucky Department of Education, and many other organizations to develop this three-part series that is currently being aired on KET through its “Cable in the Classroom” programming.

- ***Kentucky’s Forests - Kentucky Future Video***

The Division of Forestry received a 319 grant from the Division of Water to produce this 30-minute video promoting the division’s award-winning Forest Stewardship Program. The video focuses on the 25-year involvement of the Ben and Wanda Duvall family of Big Clifty in managing their forests. The video was aired several times on KET’s programming schedule.

- ***Forest Insect and Disease Analysis***

Many forest landowners do not realize that two major insect pests are threatening Kentucky’s forests: the southern pine beetle (SPB) and the gypsy moth. To combat these threats, the division has conducted ground and aerial detection surveys to identify areas of outbreak and to assess the need for suppression and treatment.

Kentucky has just experienced the worst infestation of southern pine beetle in history. Due to many years of drought, SPB populations exploded, causing a massive infestation in numerous varieties of pine, including white, Virginia, shortleaf, pitch and loblolly. The beetles also attacked hemlock, spruce and other ornamental conifers in urban areas. Beetle numbers began to decline in late summer 2002, due to lack of food and the increasing numbers of the SPB natural predator, the clerid beetle. The beetle infestation began in southcentral and southeastern Kentucky and progressed north and northeast to the Ohio River following the natural pine range. An isolated outbreak of the beetle occurred in the division’s Pennyryle State Forest (PSF) in Christian and Hopkins counties. The division was able to slow the SPB infestation by thinning the pine stands to keep the beetles from infesting privately owned pine woodlands surrounding the state forest.



The division currently partners with the Animal Plant Health Inspection Service (APHIS) to conduct annual gypsy moth trapping. Gypsy moths defoliate many species of oak, hickory and various other types of hardwoods. These moths are a



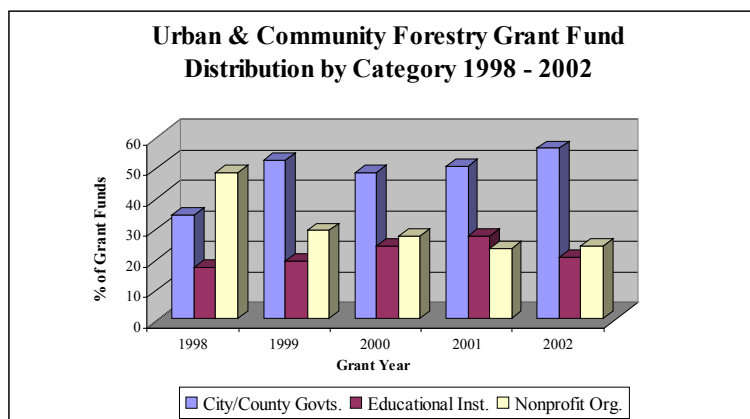
significant pest in the New England states and are slowly progressing south along the Atlantic coast. Gypsy moths have been found in Virginia, West Virginia, North Carolina, and isolated areas in Tennessee. To monitor for this potential threat, the division sets out approximately 7,250 pheromone traps in 63 counties in eastern, northeastern, southeastern, and central Kentucky to check for moth progression.

Luckily, Kentucky's hardwood forests have been spared of any significant gypsy moth infestation, but the division will continue to monitor.

- ***Urban and Community Forestry***

Kentucky's Urban and Community Forestry Assistance Program was initiated in 1990. Since its inception, over \$3.5 million of pass-through grant funds have been distributed to municipalities, nonprofit organizations, and educational institutions across the state. (See Table 6 below for the breakdown on grant fund distribution.) These funds were used for the development of local urban forestry programs, outdoor classrooms, tree planting projects, and environmental education materials. Nearly 75 percent of the state's population has benefited from local urban forestry programs, which exist in over 127 municipalities.

TABLE 6 - Grant Fund Distribution



The Kentucky Division of Forestry also participates in the Tree City USA (TCUSA) Program which recognizes communities that demonstrate a strong commitment to the management of their urban forests. This program is sponsored by the National Arbor Day Foundation, in cooperation with the National Association of State Foresters.

- ***Arbor Day***

The Kentucky Division of Forestry has been actively involved in the promotion of Arbor Day for over 107 years. Historically, Arbor Day is celebrated on the first Friday of April, but communities and organizations across the state begin local ceremonies as early as mid-March and continue them throughout May. Kentucky averages over 500,000 trees planted annually for Arbor Day, with 2002 the most successful Arbor Day in the history of the state with a record 580,000 trees planted. These trees will not only provide environmental benefits to their communities, but they will also provide economic and social benefits as well. As the trees grow and mature, they will contribute to the overall value of the property on which they are growing, in some cases, as much as 20 percent more. As they mature, strategically placed trees will also reduce a homeowner's heating and cooling costs.

Other Program Highlights

- ***Nursery Management Program***

Two state tree nurseries are operated by the Division of Forestry and are located near Gilbertsville (John P. Rhody Nursery) and West Liberty (Morgan County Nursery). The nurseries supply bare-root seedlings for sale and distribution to Kentucky landowners and vendors for planting on a variety of reforestation projects. An increasing demand is present for seedlings to be supplied for the Conservation Reserve Enhancement Program Wetland Reserve Program carbon sequestration, and other incentive-based projects.

Total tree sales have increased from 3,574,850 in FY 2000 to 5,915,600 in FY 2002. The percentage of hardwoods grown in comparison to pines has significantly increased from 62 percent in FY 2000 to 77 percent in FY 2002. Thirty different species are grown to accommodate plantings on upland and bottomland sites, as well as mine reclamation soils. Target production is 7 million seedlings with 80 percent of those seedlings being hardwood species.

- ***Fire***

The Fire Management Program faced a very severe fire season in the fall of 2001. The Division of Forestry suppressed 2,010 fires that burned 163,327 acres in 2001 with 120,000 acres burning in the fall fire season alone.

Division of Forestry personnel, equipment, and overhead teams were mobilized for over three weeks during the month of November to our Eastern, Kentucky River and Southeastern Districts. Other state resources utilized included Kentucky National Guard hand crews and helicopters, Department of Corrections' crews and other state agency personnel. Additional assistance in the form of personnel and equipment was provided through the Southeastern Forest Fire Compact agreement that the division has with the other southern states in our region. Also, a southern region overhead team made up of state and federal employees was assigned to our Eastern District to assist in managing the fire emergency in that district.

The division applied for and was approved for three fire assistance declarations from the Federal Emergency Management Agency. The declarations covered 25 eastern and southeastern counties.

Luckily the spring and especially the fall fire seasons in 2002 were fairly light with the division suppressing 976 fires that burned 23,542 acres. The division was able to initiate its Incident Command System (ICS) overhead team training in 2001 and complete the training in 2002. The intensive training allowed the division to better manage fire and other emergencies that involve numerous personnel, equipment and other agencies.

The division completed the installation of its new high-band repeater system in 2002. The new radio system has greatly enhanced communication capabilities and enhanced firefighter safety. The division was also able to purchase over \$150,000 worth of protective gear for rural fire departments through a federal grant. This equipment will greatly enhance their safety when assisting the division on wildland fires.

- ***Governor's Summit on Wildland Fire and Arson***

The Governor's Summit on Wildland Fire and Arson, "Putting Our Communities at Risk" was held at Jenny Wiley State Resort Park on Oct. 9 and 10, 2002. A total of 158 people registered for the summit. The summit was convened to address the constant threat of wildland fire, and more specifically, the threat of arson in Kentucky. Arson is the leading cause of wildland fire in Kentucky, with eastern and southeastern Kentucky being the predominant location of the arson activity. Arsonists start approximately 55 percent of all fires in Kentucky. The summit's intent was to make participants more aware of the total impacts wildland fire had on the region and to ask for their commitment in solving the problem. Strong attempts were made to make citizens aware of the issues. In essence, the summit was asking for people to "Take a Stand Against Wildland Arson."

Solutions proposed from the summit include:

Expand the role of prevention education and utilize the existing resources and networks to develop an effective and productive attack on the arson problem.

- * Initiate a Community Action Response Team comprised of individuals from the Kentucky Division of Forestry, Division of Conservation and the USDA Forest Service. The team would meet with any community or group to discuss the wildland fire and arson problem in their area. Essentially, the team would listen to the group, help define the problem, and assist the community group in setting in motion a plan of action to reduce the problem.
- * Partner with PRIDE to further the messages of FIREWISE, community involvement, fire prevention, fire awareness and local action groups.
- * Increase the efforts of fire prevention education in the schools at all levels. Programs should be tailored to Kentucky and to the region.
- * Increase the use of Prevention Education Teams.
- * Utilize the value of the FIREWISE program to help with the efforts of community and personal safety. These can be small projects or FIREWISE councils.
- * Increase training and equipment access for firefighters at all levels.
- * Make efficient use of the volunteer fire department system to help promote local cooperation since they are often an integral part of the community.
- * Promote talks within the health and mental health communities to explore opportunities to improve the quality of life and to provide access to needed counseling for troubled juveniles.
- * Publicize the fact that costs of wildland fire and arson are more than acres burned. Costs in tourism dollars, jobs lost, lost work productivity, tax dollars lost through declining economy, health costs, forest economic dollar loss to private and secondary industry, and loss of local budgets are all part of the impacts on the citizens of the Commonwealth.

Address the law enforcement needs and concerns to ensure higher investigation and prosecution rates in the fight against arson.

- * Increase the law enforcement capabilities to arrest and prosecute arsonists. Regional efforts being addressed can help with the Kentucky efforts. An increase in trained law enforcement personnel with more time to dedicate to wildland arson is needed, but awareness of the attorneys and courts that are presented with arson cases must also be increased.
- * Promote "Neighborhood Watch" type programs.

- * Discuss issues of four-wheeler and ATV use and trespass on private lands. Approaches to problems and solutions ranged from working with the ATV groups to registering and licensing ATVs.

Utilize technology to capture information, display accurate analysis of the problem, and plan the strategy to reduce the impacts of wildland fire and arson.

- * Continue to expand the useful products of technology to assist communities and other decision makers with thorough and beneficial data about the fire problem and the gaps that exist in the efforts. One of the biggest challenges is to finish the risk analysis for Kentucky. Use Geographic Information Technology to provide information for analysis and decision making associated with wildland fire issues.
- ***Kentucky Wildfire Prevention CD-ROM***
The Division of Forestry received a grant from the USDA Forest Service to produce a CD-ROM geared for 3rd to 8th graders. This CD-ROM is designed to help students explore the role of fire in Kentucky's forests. It addresses not only the problem of wildland arson and debris fires, but also highlights the benefits of planned prescribed fire. It will also help students get a better understanding of the relationship between wildland fire and the ecosystem. This CD-ROM is an interactive learning tool that focuses on wildfire prevention. Users will find fun, attention grabbing, interactive graphics and activities to help them learn about wildfire prevention. Video clips and an active glossary explain to users important wildfire prevention concepts and terms.



Natural Resources and
Environmental Protection Cabinet

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Printed on recycled paper
with state funds.
March 2003